Arcturus^{XT} ™ LCM System Troubleshooting Guide

Nikon Eclipse T*i*-E Microscope Base

CATEGORY	SYMPTOM	POSSIBLE CAUSE(S)	REMEDY
IR Laser Capture (LCM)			
	Cells do not adhere to the CapSure® Cap	Inadequate IR laser power and/or duration settings	Open the IR Settings tab within the Microdissect Dialog box and the adjust power and duration settings until proper wetting is achieved. See Section 6.6 (Setting the IR Capture Spot Size) for complete instructions.
		Tissue preparation	Debris or loose tissue may be present: Use a PrepStrip to remove the debris or loose tissue from the slide prior to microdissection.
			Folds may be present: Position the Cap such that it is not placed on the fold. Alternatively, increase IR laser power and duration settings to achieve proper 'wetting'.
			Tissue not dehydrated: Ensure that the section is properly dehydrated. Proper dehydration: 100% ethanol for 1minute, followed by Xylene for 5 minutes and then air dry for 5 minutes.
		Cap	The CapSure cap may be damaged. Try another cap.
	Cannot locate IR Laser	No cap on slide	Place cap on slide.
		Bias and/or brightness settings too low	Open the IR locate tab within the Microdissect Dialog Box. The Bias setting should be at 60. You may also need to adjust the Brightness setting, found in the Inspect Tool Pane, to darken the field of view and visualize the IR laser guide light.
		IR laser is out of the field of view	IR laser location needs adjustment, service is required. Please contact technical support to arrange for service.
			Fire IR laser using the test fire button located in the Microdissect Tool Pane. Move around under the cap to locate wetted spot. Right click in the center of spot and select "IR spot located" from pop up window.
		Tissue is thick or dark	Move to a thinner tissue area or a clear area on the slide.
	IR Capture laser fires off target	IR laser location set incorrectly	Relocate IR laser. See Section 7.6 "Locating the IR Capture Laser"
UV Laser Cutting			
	UV Laser does not cut	Neutral density filters may be in place	Verify that the ND filters are in the out position (levers tilted to the right). The ND filters are located behind the front cover of the UV laser housing, on the left side of the instrument.
		Tissue is thick or fibrous	Reduce UV cutting speed (located in the Microdissect Tool pane)
	UV Cutting is inefficient	Cutting speed	Reduce UV cutting speed using the slide bar located in the Microdissect Tool Pane
Image Quality			
	Long lag time when updating the live image	Light intensity and/or camera gain settings not optimize	The Brightness setting located in Microscope Tool Panel should = or >0.200s. Open the Select dialog box and re-adjust intensity and/or camera gain to achieve an appropriate brightness setting.
	Brightfield image fully or partially blocked	1) Apertures: Field and/or Condenser	If you have the Nikon phase contrast illumination tower, check the field and condenser apertures to make sure they are both fully open. Check the filter sliders found in illumination tower that they are not partially pushed in.
		2) Field aperture not centered	Center field aperture
		3) Fluorescent cube turret	Check to ensure position is fully clicked in
		4) Magnification Tube	Check to ensure position is fully clicked in
	Poor image quality at 40x and 60x	DIC sliders	Remove DIC sliders located below each objective. Note: Replace empty slot with cover to prevent dust from entering
	Background of live image not clear/white	1) White balance off	Re-establish white balance in camera properties dialog, located under View in the pull down menu
		2) Fluorescence cube in place	Check fluorescence turret. If using brightfield illumination, it should be in an position not containing a filter cube
	Slide overview image too dark/bright	Settings not optimized	Change magnification to 2x and adjust the brightness setting. Right click in slide overview area and select "Remember settings" in pop-up window, select "Yes" to save for all future overviews, and finally select "Require Overview".

Fluorescence			
	Fluorescence Image fully or partially blocked	Fluorescent Field Aperture ; Fluorescence ND Filters	Ensure that the fluorescence field aperture is centered
			Fluorescence ND filters should be in the out positions
			The shutter on the fluorescence turret should be open ("O" position).
	Fluorescence signal suboptimal (long exposure time required)	Fluorescent ND Filters	ND fluorescent filters should be in their out positions.
		DIC or Phase Optics	The DIC analyzer & polarizer should both be in their out positions. The Condenser position should be set at "A".
		Fiber Optic Cable	Check the fluorescence adapter cone to ensure it has been attached properly. A
			Ensure that the fiber optic cable is fully inserted into the cone and the EXFO control box.
		Fluorescence Lamp	Check the position of the fluorescence lamp to ensure it is properly seated. See the EXFO user guide.
			Check the lamp hours. Lamp life = 2000 hours.
Phase Contrast / DIC			
	The phase contrast image does not appear optimal	The diffuser	Ensure the diffuser is in the "Out" position in the Select Options dialog box.
		Phase annulus	Ensure the proper phase annulus is chosen for the objective in use. PhL = 4x; Ph1 = 10x and 20x; Ph2 = 40x and 60x.
		Annular diaphragm	Ensure the annular diaphragm is centered.
	The DIC image does not appear optimal	The diffuser	Ensure the diffuser is in the "Out" position in the Select Options dialog box.
		Condenser turret position	Ensure the condenser is turned to the "DIC N1" position.
		Polarizer and analyzer	Ensure that the polarizer and analyzer are both fully pushed into their "IN" positions.
		Condenser alignment	Ensure that the condenser is properly centered and focused.
General Instrument			
	Microdissection (UV and/or IR) not aligned to markings of drawing item(s)	Magnification of image does not match software operation.	Check position of Intermediate magnification dial and compare against magnification tab located in microscope dialog box. Both of these items should match at 1X or 1.5X. See Section 5.4 (Using 1.5X Magnification).
		UV and/or IR lasers not located properly	Perform IR and/or UV locate found in the microdissection dialog box. See Sections 7.5 (Locating the UV Cutting Laser) and 7.6 (Locating the IR Capture Laser).
	Brightfield light is flashing (either slow or fast)	Stage bump	Re-align stage so that all front edges of the stage are parallel. Close down software, turn off the Arcturus^{XT} instrument. Restart the Arcturus^{XT} instrument and re-initiate the operating software.
		Limit for cap robot arm exceeded	Lower the cap fork by turning the lead-screw counter-clockwise (3mm slotted screwdriver) until the motor takes hold. Close down software, turn off the Arcturus^{XT} instrument. Restart the Arcturus^{XT} instrument and re-initiate the operating software. Contact Technical Support at 1-800-831-6844 option 5 for more details.
	Microdissection process does not initiate within AutoScanXT by using the "Harvest" button	Live image was moved away from where static image was taken	Move the cap to the area containing the items for microdissection and click the Harvest button again.

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